AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 8. (Canceled)

9.   (Currently Amended) An image decoding method for decoding image data formed by a plurality of frames, executed by an image decoding device having a reference image memory for storing the plurality of frames which are classified into a plurality of categories, the image decoding method characterized by having

a current category decoding step for decoding a category number of a current frame,

a reference image specifying data decoding step for decoding a reference image specifying data which specifies a reference image data, for said decoded category number,

a predicted image producing step for producing a predicted image from an image data specified by said reference image specifying data,

a difference decoding step for decoding a difference between a decoded image of the current frame and the predicted image,

a decoded image producing step for producing the decoded image of the current frame from said decoded difference data and said predicted image, and

a decoded image storing step for storing said produced decoded image data of the current frame into [[a]] said reference image memory for said decoded category number,

wherein said reference image specifying data decoding step has

a tentative frame number setting step for setting a tentative frame number with respect to the image data of a frame belonging to an i-th category, among a plurality of image data stored in said reference image memory, and

a tentative frame number decoding step for obtaining the tentative frame number which specifies an image data to be selected at said predicted image producing step, by decoding the reference image specifying data.

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10. (Original) The image decoding method as described in claim 9, characterized in that

said reference image specifying data is formed by a category number to which the reference image data to be read from said reference image memory by said predicted image producing step belongs and a frame number for specifying a frame belonging to a category specified by that number.

11. (Canceled)

12. (Currently Amended) The image decoding method as described in claim 9[[11]], characterized in that said tentative frame number setting step has

a decoding order recording step for recording a decoding order of a frame decoded in past as a decoding order number for each category, and

a tentative frame number determining step for determining the tentative frame number of the frame decoded in past, from the decoding order number of the frame decoded in past and the category number of the current frame.

13. (Currently Amended) The image decoding method as described in claim 9[[11]], characterized in that said tentative frame number setting step has

a decoding order recording step for recording a decoding order of a frame decoded in past as a decoding order number,

a category number recording step for recording the category number of the frame decoded in past, and

a tentative frame number determining step for determining the tentative frame number of the frame decoded in past, from the decoding order number of the frame decoded in past and the category number of the current frame.

14. (Original) The image decoding method as described in claim 12 or 13, characterized in that said tentative frame number determining step has

a difference frame number assigning step for assigning a difference frame number in an order of larger decoding order number, and

a tentative frame number calculating step for being equipped in advance with a table for assigning the tentative frame number with respect to a combination of the difference frame number and the category number of the current frame, and calculating the tentative frame number by referring to the table from the difference frame number and the current frame number.

15. (Original) The image decoding method as described in claim 12 or 13, characterized in that said tentative frame number determining step has

a difference frame number assigning step for assigning a difference frame number in an order of larger decoding order number, and

a tentative frame number calculating step for setting in advance a calculation formula for calculating the tentative frame number with respect to a combination of the difference frame number and the category number of the current frame, and calculating the tentative frame number from the difference frame number and the current frame number by calculation.

16. – 17. (Canceled)

18. (Currently Amended) An image decoding device for decoding image data formed by a plurality of frames, the image decoding device characterized by comprising

a reference image memory for a plurality of frames which are classified into N sets (N≥2) of categories,

a current category decoding unit for decoding a category number of a current frame,

a reference image specifying data decoding unit for decoding a reference image specifying data which specifies a reference image data, for the category number obtained by said current category decoding unit,

a predicted image producing unit for producing a predicted image from an image data specified by said reference image specifying data,

a difference decoding unit for decoding a difference between a decoded image of the current frame and the predicted image,

a decoded image producing unit for producing the decoded image of the current frame from said decoded difference data and said predicted image, and

a decoded image storing unit for storing said produced decoded image data of the current frame into the reference image memory for the category number obtained by said current category decoding unit,

wherein said reference image specifying data decoding unit has

a tentative frame number setting unit for setting a tentative frame number with respect to the image data of a frame belonging to an i-th category, among a plurality of image data stored in said reference image memory, and

a tentative frame number decoding unit for obtaining the tentative frame number which specifies an image data to be selected at said predicted image producing unit, by decoding the reference image specifying data.

19. – 20. (Canceled)

21. (Currently Amended) An image decoding method for decoding image data formed by a plurality of frames, executed by an image decoding device having a reference image memory for storing the plurality of frames which are classified into a plurality of categories, the image decoding method characterized by having executing

a current category decoding step for decoding a category number of a current frame,

a reference category setting step for setting a category that can be referred at a time of decoding a frame of a category to which the current frame belongs,

a reference image specifying data setting step for setting a reference image specifying data, for an image data of a frame stored in [[a]] said reference image memory, which belongs to the category that can be referred that is set by said reference category setting step,

a reference image specifying data decoding step for decoding the reference image specifying data which specifies a reference image data,

a predicted image producing step for producing a predicted image from an image data specified by the reference image specifying data,

a difference decoding step for decoding a difference between a decoded image of the current frame and the predicted image,

a decoded image producing step for producing the decoded image from a difference data and the predicted image, and

a decoded image storing step for storing the decoded image of the current frame into the reference image memory for the category number obtained by said current category decoding step,

wherein said reference image specifying data decoding step has

a tentative frame number setting step for setting a tentative frame number with respect to the image data of a frame belonging to an i-th category, among a plurality of image data stored in said reference image memory, and

a tentative frame number decoding step for obtaining the tentative frame number which specifies an image data to be selected at said predicted image producing step, by decoding the reference image specifying data.

22. – 23. (Canceled)

24. (Currently Amended) An image decoding device for decoding image data formed by a plurality of frames, the image decoding device characterized by comprising

a reference image memory for a plurality of frames which are classified into N sets (N≥2) of categories,

a current category decoding unit for decoding a category number of a current frame,

a reference category setting unit for setting a category that can be referred at a time of decoding a frame of a category to which the current frame belongs,

a reference image specifying data setting unit for setting a reference image specifying data, for an image data of a frame stored in said reference image memory, which belongs to the category that can be referred that is set by said reference category setting unit,

a reference image specifying data decoding unit for decoding the reference image specifying data which specifies a reference image data,

a predicted image producing unit for producing a predicted image from an image data specified by the reference image specifying data,

a difference decoding unit for decoding a difference between a decoded image of the current frame and the predicted image,

a decoded image producing unit for producing the decoded image from a difference data and the predicted image, and

+a decoded image storing unit for storing the decoded image of the current frame into the reference image memory for the category number obtained by said current category decoding unit,

wherein said reference image specifying data decoding unit has

a tentative frame number setting unit for setting a tentative frame number with respect to the image data of a frame belonging to an i-th category, among a plurality of image data stored in said reference image memory, and

a tentative frame number decoding unit for obtaining the tentative frame number which specifies an image data to be selected at said predicted image producing unit, by decoding the reference image specifying data.

25. - 31. (Canceled)

32. (Currently Amended) A computer-readable recording medium storing a computer-executable A recording medium recording an image decoding program for causing a computer to execute the image decoding method as described in claims 9 or 21.